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Slaughterhouse Policy in England and Wales

FOLLOWING the publication of the Report of the Interdepartmental Committee on Slaughterhouses in 1955, the Government has issued a White Paper on Slaughterhouse Policy (Command 9761) which accepts the recommendations of the Interdepartmental Committee with minor exceptions.

As soon as possible regulations will be laid before Parliament which prescribe minimum standards for slaughterhouse construction for the purpose of securing humane handling of animals, hygienic handling of meat, adequate facilities for meat inspection and satisfactory conditions for slaughterhouse workers. These will apply to new slaughterhouses as soon as they are prescribed but not to existing premises until a date to be appointed by the Minister of Agriculture, Fisheries and Food. At a later date regulations covering hygienic practices in slaughterhouses will be laid.

Local authorities will be required to review existing and proposed slaughtering facilities in their districts and prepare reports. These will be submitted to the Minister not earlier than six months after the coming into force of the enabling legislation or nine months after the regulations prescribing standards are laid (whichever is the later) and not later than 12 months after the end of the minimum period, except with the Minister's concurrence. Between the passing of the enabling legislation and the submission of reports (*i.e.* a 6 to 18 month period) applications for licences for new or modernised slaughterhouses will be accepted freely, subject only to compliance with the regulations, to planning requirements and to there being no prohibition on account of existing public slaughtering facilities. After reports have been submitted and accepted, licences for new slaughterhouses will be granted only with the consent of the Minister.

The power of local authorities under present legislation to revoke existing licences and to refuse further licences where adequate *public* slaughtering facilities are available will remain in force, though additional licences may be granted in special cases. The power of local authorities to withhold licences on the grounds that there are adequate *private* slaughtering facilities in the district will be repealed.

The White Paper explains the considerations which have led to the rejection of the " moderate concentration " policy of successive post-war governments which envisaged the centralisation of slaughter into 300 to 400 slaughterhouses. There are at present 4,375 slaughterhouses (4,173 private and 202 public) operating in England and Wales, about one third of the pre-war number; the Government anticipates that, in spite of the number of slaughterhouses which may be built in the period of freedom, the regulations on slaughterhouse construction will ensure that the total will not be higher than at present.

The new policy, marking as it does the end of " moderate concentration," may be received with considerable satisfaction by a section of the meat trade. In the last two years slaughterhouse owners, released from the shackles of nearly 15 years of control, have been free to slaughter at all hours of the day and night and seven days a week in most of the 4,375 slaughterhouses. Soon there will also be a large measure of freedom to build the types of slaughterhouses best suited to the trade and located in the most convenient parts of the country. In particular the new policy will be welcomed by the larger wholesale interests who may be expected to have the necessary capital available. Those local authorities which have provided public slaughterhouses will be less satisfied because competition from private slaughterhouses, already a serious problem in some areas, will be intensified with a very probable increased burden on the rates. In these days of restricted borrowing and high interest rates, we may well be seeing the beginning of the end of public slaughterhouses.

The White Paper will be examined very carefully by public health workers. They will not quarrel with the Government's aim to ensure " the slaughtering of stock in humane conditions, the maintenance of the highest standards of hygiene during the whole process from the reception of cattle to the distribution of meat and offal and satisfactory conditions for slaughterhouse workers," but they have a strong feeling that such matters are already adequately dealt with under existing legislation. The question of meat inspection appears to have been left out of the Government's calculations.

In pre-war days meat inspection at slaughterhouses was far from satisfactory and considerable quantities of meat reached the consumer uninspected. During

(*Concluded at foot of col.* 1, *page* 322)

Congenital Infection with *Mycobacterium johnei* in Cattle

BY

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THE possibility of congenital infection of the calf with *Mycobacterium johnei* appears to have given rise to only three published papers since the discovery of the organism in 1895. Alexijeff-Goloff (1929) claimed to have seen and isolated Johne's bacilli from a three-month-old bovine foetus and foetal membranes, which were removed from the uterus after the mother had been slaughtered as a clinical case of Johne's disease. He also stated that he had found *M. johnei* in faeces, urine, blood and vaginal and intestinal scrapings in a three-and-a-half-week-old calf completely isolated at birth from its clinically infected mother. Alexijeff-Goloff's conclusion that " Johne's disease in the ox runs in the form of a bacteraemia, in the course of which, in pregnant animals, intra-uterine infection of the foetus occurs," appeared to be somewhat extravagant at the time, and in publishing an abstract of his article M'Fadyean (1935) commented that " this conclusion should meanwhile be treated with incredulity and regarded as the result of errors in observation."

In 1935 Dunkin described a possible congenital case of Johne's disease in a bull calf which was very carefully removed from its mother at birth, the latter being an advanced clinical case of the disease. The calf gave a strong positive johnin reaction at three months, but did not show clinical symptoms until three-and-a-half years of age.

Recently, Pearson & McClelland (1955) have reported the isolation of " organisms showing the cultural and morphological characters of Johne's bacilli " from an eight-month-old foetus removed from a clinically infected cow at slaughter.

The earlier reports, together with a certain amount of circumstantial evidence in herds in Lancashire and Cheshire, seemed to indicate that further investigation should be carried out, and since July, 1952, 24 bovine foetuses have been examined at this laboratory. (The cultural results from 16 of these foetuses were presented to the O.E.E.C. seminar on Johne's Disease, February/March, 1955.)

Methods

In most cases the foetuses were obtained *in utero* from cows which were slaughtered with a history of clinical Johne's disease, and usually came from a Johne's disease-infected herd. Five of the foetuses were obtained without any history, being from apparently healthy cows slaughtered for food at an abattoir.

In each case the foetus was carefully removed from the uterus and then opened, sterile precautions being taken. In each case liver, lungs, spleen and kidneys were cultured, and usually small intestines, mesenteric lymph nodes and stomach fluid, in addition to cotyledons and allantoic fluids. Pieces of various organs were removed into sterile Petri dishes and ground up with sterile sand in a mortar before being treated with 5 per cent. oxalic acid for half an hour at 37° C. After filtering through four layers of sterile gauze the coarse filtrate was centrifuged (3,000 r.p.m. for 15 minutes) and the supernatant poured off. The deposit was then cultured. Quite early it was found necessary to sterilise the oxalic acid to avoid contamination of the media with sporing organisms.

Until the end of 1953 the media used was Wilson Taylor's (1950) modification of Finlayson's egg-yolk *M. phlei* medium. This medium presented one difficulty in that any overheating during sterilisation produced a fatty exudate on the surface, and this material tended to inhibit growth of *M. johnei*. After 1953 the Williams Smith (1953) modification of Dubos medium was used, and apart from eliminating the above fault had the advantage of being quite translucent. Lowenstein-Jensen medium was used in subculture tests to differentiate organisms from tubercle bacilli.

In the earlier cases, which include all the foetuses from which organisms were cultured, the material from each organ was sown on to five or six slopes of the Finlayson-Wilson Taylor medium. Later this was changed to six slopes of Dubos-Williams Smith medium and two or three of Lowenstein-Jensen medium. The slopes were incubated at 37° C. for at least four months, and in many cases up to 12 months, before being discarded.

Results

Cultures of organism resembling *M. johnei* were obtained from five of the 24 foetuses examined.

No. 1.—The cow was a clinical case of Johne's disease, confirmed at *post-mortem* examination. A few colonies were obtained in cultures from the foetal kidney. These colonies were characteristic of *M. johnei* in appearance and in time taken to grow; films made from them showed typical bacilli. No further identification was carried out. Other organs cultured, with negative results, were the liver, spleen, lung, ileo-caecal valve and mesenteric lymph nodes, and also allantoic fluid and maternal and foetal cotyledons.

No. 2.—A foetus out of a four-and-a-half-year-old cow from a Johne's disease-infected herd, slaughtered because it reacted to mammalian tuberculin while being in an attested herd. This cow had given a positive complement fixation test (Hole, 1952) at 10 months of age but never showed clinical signs of Johne's disease. At *post-mortem* examination no lesions of tuberculosis were found either macroscopically or on histological section and the carcase was graded as second-class meat. Typical *M. johnei* were found in the intestines.

Organisms resembling *M. johnei* were grown from the foetal liver and ileo-caecal valve region of the intestines after three and four months' incubation, respectively. These colonies grew on sub-culture on Finlayson-Wilson Taylor medium, but failed to grow on Lowenstein-Jensen medium. Negative results were obtained on culture from lung, spleen, kidney, mesenteric lymph nodes and stomach fluid.

No. 3.—The cow was culled from a Johne's disease-infected herd as a poor milk yielder, and also gave a doubtful tuberculin reaction. At the time of slaughter a complement fixation test gave a doubtful result for Johne antibodies and a *post-mortem* examination of the intestines failed to show any lesions or acid-fast organisms.

After two months' incubation, colonies of organisms resembling *M. johnei* were cultured in fairly large numbers from the foetal kidney, and a few colonies from the stomach contents. Those from the kidney grew on sub-culture on *M. phlei* egg medium but also grew when sub-cultured on to Lowenstein-Jensen medium although the growth on the latter was very poor compared with that on Finlayson-Wilson Taylor medium. Organs which failed to produce colonies were liver, spleen, lung and maternal and foetal cotyledons and allantoic fluid.

No. 4.—The cow was a five-year-old, culled from a Johne's disease-infected herd as a poor yielder, but had scoured three months before slaughter. *Post-mortem* examination showed the intestines to be infected with *M. johnei*. Twin embryos, probably less than six weeks old, were found in the uterus. All the embryonic abdominal and thoracic organs were ground up together and after six months' incubation a few colonies resembling *M. johnei* were grown. These colonies failed to grow on sub-culture on Lowenstein-Jensen medium, but also failed to grow on sub-culture on *M. phlei* egg medium. Guinea-pig and chicken inoculations gave negative results for tuberculosis.

No. 5.—This case consisted of some foetal organs (lungs, liver, spleen, small intestine and mesenteric lymph nodes) kindly sent by Mr. Doyle from Weybridge. The cow had been slaughtered as a clinical case of Johne's disease.

Organisms resembling *M. johnei* were cultured after seven months' incubation from the foetal spleen but there were only three colonies. The colonies were sub-cultured, but a fault in the incubator sent the temperature up to 56° C. for about 24 hours and killed the organisms.

Maternal Organs

Maternal cotyledons from 13 pregnant uteri from healthy cows were examined by films and cultured, but in no instance were acid-fast organisms seen or cultured. However, three non-pregnant uteri from clinical cases of Johne's disease all showed in films organisms morphologically characteristic of *M. johnei*, with typical clumping formation. The films were made from scrapings of mucous membrane from over the caruncles, and also from the normal uterine mucosa. Cultures made from one uterus produced numerous colonies in two months on Dubos-Williams Smith medium. A few very small colonies were seen on the Lowenstein-Jensen medium. Inoculation of guinea-pigs and cockerels with these colonies failed to set up a tubercle infection.

Ovaries from four cows with clinical Johne's disease were cultured and in one case produced colonies of typical acid-fast organisms which grew on the *M. phlei* egg medium but not on Lowenstein-Jensen medium. Organisms morphologically and culturally characteristic of *M. johnei* were also obtained from the testicles of a bull slaughtered with clinical Johne's disease.

Discussion

The question as to whether or not congenital infection with *M. johnei* in cattle does occur cannot be finally answered until the organisms cultured from foetal organs are shown to have reproduced Johne's disease in susceptible animals, which must have been born and reared in a Johne-free environment. As yet it has not been possible to attempt such an identification at this centre.

Nevertheless, it does appear from cultural tests and biological tests with guinea-pigs and cockerels that the colonies obtained from foetal organs were probably those of *M. johnei*, with the possible exception of case No. 3. Here the organisms may have been *M. tuberculosis avium* although in films they were quite indistinguishable from *M. johnei* and growth was very slow for the avian tubercle bacillus. It does seem possible that in culturing such a heavy inoculum of *M. johnei* on to the *M. phlei*-deficient egg medium, the bacilli could themselves provide sufficient of the essential substance to initiate growth.

Cultures from the non-pregnant uterus produced a few tiny colonies on Lowenstein-Jensen medium in primary culture in contrast to the much more luxuriant growth on media containing *M. phlei*. Films from the uterine mucosa in this case had shown large numbers of acid-fast organisms and here again it may be possible that *M. johnei* had provided its own growth factor.

The presence of *M. johnei*-like organisms in the ovaries and uterus suggests that a bacteraemia may occur during some stage of the disease. There is considerable evidence in the literature to indicate that *M. johnei* may be found well beyond the confines of the intestines and associated lymph nodes. Doyle (1954) reported the isolation of *M. johnei* from the udders of two cows and from the spleen and liver of a heifer, all being clinical cases of Johne's disease, and he cites four authors who have cultured Johne's bacilli from various organs of cattle affected with Johne's disease. Pearson & McClelland (1955) have isolated *M. johnei* from the uterus of a non-pregnant clinically affected cow. Wilson Taylor (1953) infected very young calves experimentally with *M. johnei*, and in the clinical cases which resulted was able regularly to recover the organism on culture " from almost any of the lymph nodes or abdominal or thoracic viscera." In the experimental disease in the goat, Levi (1948) has found *M. johnei* in several sites other than intestines and mesenteric lymph nodes, but states that animals which had not become clinical cases and

were "examined within six months of infection yielded the organism from unusual foci only in a relatively small number of cases." Harding (1956) found microscopic lesions associated with Johne's bacilli in most of the parenchymatous organs of goats experimentally infected with Johne's disease. Most of the animals were killed without reaching the clinical stage of the disease.

In case No. 2 the cow had never shown clinical symptoms of Johne's disease although lesions were found in the intestines at *post-mortem* examination. If we assume that the organisms cultured from the foetuses had originally come from the maternal tissues, it would seem possible that it is not necessary for the animal to become a clinical case for a bacteraemia to occur.

In case No. 4 gestation had not proceeded for more than about six weeks. This indicates that the organisms cultured from the embryos, if derived from the uterine mucosa, would have reached the embryo or embryonic membranes before the placenta was completely formed. According to Hammond (1927) the attachment of the foetal membranes to the uterine cotyledons does not begin until the end of the first month and is not completed until some time during the third or even fourth month of gestation. Before attachment occurs the uterine epithelium over the cotyledonary burrs is completely denuded by binucleate cells migrating from the trophoblast, assisted by cells, more phagocytic, which actually engulf portions of the uterine epithelium. Unless lesions occur at the placenta as in congenital tuberculosis, this phagocytosis of the uterine mucosa together with any Johne's bacilli that may be there could explain the presence of the organisms in the foetus.

Whether congenital infection with *M. johnei* presents a problem in the control of Johne's disease remains to be seen. At this centre, organisms resembling *M. johnei* have been cultured from only a few foetuses, approximately one quarter of the number examined with a history of Johne's disease in the mother, and then almost entirely clinical cases. Doyle (1955) indicated that the percentage might be higher in clinical cases.

Summary

Of 24 bovine foetuses obtained from the uteri of slaughtered cows five produced cultures of organisms resembling *M. johnei* from various organs. Nineteen of the cows were either clinical cases of Johne's disease or came from a Johne's disease-infected herd. The other five were apparently normal animals killed at an abattoir.

Four foetuses which produced the *M. johnei*-like organisms were from cows with lesions of Johne's disease in the gut, three being clinical cases. The fifth foetus was from a cow which, although from a Johne's disease-infected herd, had neither clinical symptoms nor lesions *post mortem*. The identity of cultures obtained in this case was open to doubt.

M. johnei-like organisms were found in two non-pregnant uteri and one ovary from cows slaughtered as clinical cases, and also from the testicles of a bull with clinical Johne's disease.

Acknowledgments.—My thanks are due to Miss Ann Hirch of the Veterinary Pathology Department, University of Liverpool, who made several of the early cultures during my absence on foot-and-mouth disease duty, and to the various members of the profession who have helped me to obtain material.

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The Detection of Bile Pigments in Urine: a Simple Qualitative Test

BY

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THE clinical sign of icterus as evinced by yellow discoloration in veterinary patients is often masked by natural pigmentation of skin and mucous membranes and coverings of hair or fur. Of the many tests which have been devised for the detection of bile pigments in serum or urine, the following, because of its simplicity, will commend itself to the busy practitioner.

By means of a pipette, two drops of 0.1 per cent. aqueous solution of methylene blue are placed in a test tube and approximately 5 c.c. of the urine sample are added. The tube is inverted to mix the contents and examined preferably against a white background.

A positive reaction is determined by the production of a definite emerald-green colour. A pale blue colour denotes a negative result.

Discussion

A similar test described by Hutchison & Hunter (1949) relies on the use of 1 per cent. methylene blue solution but considerable variation in the amount of dye left in the test-tube by shaking out the excess as recommended by the authors, renders the interpretation of the test unreliable. The use of 0.1 per cent. solution removes this disability.

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Studies on the Relationship of the Nutrition and Management of the Sow to the Health of Litters

BY

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Introduction

IT has been well known for many years that certain months in the winter are bad months for farrowing. Pigs born then generally do badly and make slow growth after farrowing (Watson & More, 1949). That the health of litters is frequently adversely affected by cold environmental conditions is widely accepted and the installation of artificial sources of heat and the construction of accommodation where warm temperatures can be maintained has proved useful in pig rearing particularly during the colder months of the year. Nevertheless, on frequent occasions, during the winter and early spring months in the last two years, our attention has been drawn to pig herds where the results with litters were very poor in spite of satisfactory rearing accommodation, the use of the usual veterinary therapeutics, and in the absence of any specific contagion. Enquiry revealed that in these herds the sows had, during the colder months, been housed indoors during pregnancy, a factor which might be of significance. During the same period it was noted that at the Veterinary School Field Station the results with litters were eminently satisfactory and here the sows were being kept in the open during the period of pregnancy.

There are references in the literature to the importance of pasture in keeping swine thrifty and in preventing nutritional deficiencies. According to Morrison (1951) good pasture is especially important for brood sows and boars: " . . . sows that are raised in dry lot are apt to produce unsatisfactory litters." Investigations at Illinois, Missouri and Wisconsin have shown that it is hazardous to confine swine continuously to a dry lot without providing any pasture.

It was decided to set up an experiment to test the effect of the management of the pregnant sow on the health of litters using three different systems of management widely practised in commercial herds.

Plan of Experiment

Initially 12 Large White gilts of similar type and breeding were chosen, all from reasonably prolific dams. Of these six gilts, Group I (Outdoor-Outdoor) were run out at pasture from seven to eight months old onwards and were farrowed on an outdoor system. The remaining six, Group II (Indoor-Indoor) were confined indoors from weaning and were farrowed indoors or in arks on concrete runs. A third Group, III (Outdoor-Indoor), was added later consisting of three similar gilts and three sows in their second pregnancy as there were no more gilts of the required type and breeding available. The gilts and sows were all served by the same boar. No difficulty was experienced in getting any animal in any group settled.

From service onwards all the pigs were fed a mixture of 50 per cent. proprietary sow and weaner meal, the remainder being made up of home-grown oats, bakery meal and white fish meal adjusted to form a balanced ration. Six lb. per head was allowed per day during pregnancy until the last fortnight, when the ration was increased to 8 lb. per head per day. The lactating sows were all fed proprietary sow and weaner meal according to the litter size, and all litters were given proprietary creep feed from three weeks old.

Group I. During pregnancy the pigs were kept in a group on rough pasture, enclosed by an electric fence, and a simple house was provided for shelter. About two weeks before the expected date of parturition each gilt was removed to an insulated ark with a grass run and remained there until the litter was weaned at eight weeks.

Group II were kept in a group indoors and were removed two weeks before parturition to individual indoor farrowing pens or into arks with concrete runs.

Group III. Management was similar to Group I except that the animals were taken indoors into farrowing pens or into arks with concrete runs about two weeks before parturition and remained there till weaning. They had no access to green food or earth during this latter period.

The litters of Groups II and III were given iron by mouth once weekly for the first three weeks.

There was no supervision of any of the animals at parturition, nor was any manual help given, nor were piglets removed to safety during parturition. All dead piglets were examined *post mortem.*

To avoid differences which might be due to different housing, farrowing accommodation was similar as far as possible, *e.g.*, arks such as were used for Group

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The sensitivity of the test is extremely high and positive results have been obtained in urine samples containing trace amounts not detected by Gmelin's test.

The natural pigment of urine, *viz.* urochrome, does not produce a positive reaction. This fact is somewhat surprising in view of the sensitivity of the test to bile pigments but is probably due to very distinct variation in the wave-lengths of the different colours produced.

In the laboratory, the use of comparator methods and standardised solutions enables this test to be used quantitatively.

Reference

HUTCHISON, SIR ROBERT, & HUNTER, D. (1949). "Clinical Methods," 12th edit., p. 242. Cassell, London.

TABLE I
GROUP I—OUTDOOR-OUTDOOR

Pig number	Date of farrowing	Born	Weaned	Weight of litter at weaning, lb.	Average weight per pig at weaning, lb.	Location
Gilt 1	22.3.55	13	9	292	32·4	Ark 2
„ 6	7.4.55	11	10	330	33	„ 4
„ 5	1.5.55	14	11	300	27·2	„ 3
„ 3	10.6.55	12	12	354	29·5	„ 1
„ 2	14.7.55	12	9	332	36·8	„ 4
„ 4	26.7.55	10	6	254	42·3	„ 2
Totals		72	57	1,862		
Averages		12	9·5		33·5	

TABLE II
GROUP II—INDOOR-INDOOR

Pig number	Date of farrowing	Born	Weaned	Weight of litter at weaning, lb.	Average weight per pig at weaning, lb.	Location
Gilt 11	Slaughtered one week before farrowing 26.6.55					Ark 7 (on concrete)
„ 10	1.7.55	6	4	140	35	Box 5
„ 8	3.7.55	11	1	40	40	Ark 8 (On concrete)
„ 12	5.7.55	6	2	60	30	Box 2
„ 9	8.7.55	13	9	210	23·3	Ark 7 (On concrete)
„ 7	16.8.55	6	6	225	37·5	Box 3
Totals		42	22	675		
Averages (for 5 only)		8·4	4·4		33·2	

TABLE III
GROUP III—OUTDOOR-INDOOR

Pig number	Date of farrowing	Born	Weaned	Weight of litter at weaning, lb.	Average weight per pig at weaning, lb.	Location
Gilt 15	7.4.55	13	10	292	29·2	Box 2
„ 14	11.4.55	12	11	302	27·4	Ark 5 (on concrete)
„ 13	18.4.55	15	11	290	26·3	Ark 6 (on concrete)
Sow 15	18.9.55	10	8	274	34·3	Ark 8 (on concrete)
„ 16	10.10.55	12	10	352	35·2	Box 4
„ 5	13.10.55	8	5	250	50	„ 6
Totals		70	55	1,760		
Averages		11·67	9·16		33·7	

I were placed on concrete to give indoor farrowing conditions for Groups II and III, and the boxes used for Groups II and III were similar.

Findings

Tables I, II and III give details of the numbers born and weaned in the three experimental groups. The outstanding finding was that in Group I (Outdoor-Outdoor) and Group III (Outdoor-Indoor) the average number of piglets weaned per litter was 9.5 and 9.16 respectively, while in Group II (Indoor-Indoor) only 4.4 piglets were reared per litter.

The average numbers of live pigs born per litter also varied in the different groups. In Groups I and III these were 12 and 11.67 respectively, while in Group II only 8.4 live pigs were born.

The death rates in litters of the respective groups were as follows: Group I, 20.1 per cent.; Group III, 21.4 per cent.; Group II, 47.6 per cent. Thus not only were significantly fewer live pigs born in Group II than in Groups I and III, but the death rate was more than twice as high in Group II as in the others. The high death rate in Group II was largely associated with crushing; other piglets simply became unthrifty and died. There was some scouring. *Post-mortem* examination of piglets usually failed to reveal any significant bacteriological findings, but in a number of cases *Bacterium coli* and/or *Proteus* was isolated from certain of the organs.

Piglets of Groups I and III generally were more uniform and stronger at birth than those of Group II.

Gilt No. 11 in Group II became recumbent a week before farrowing and was slaughtered.

Discussion

The above experiment emphasises the importance of sows being on pasture during pregnancy if satisfactory litters are to be produced. In all probability the detrimental effect of indoor management during pregnancy was associated with a nutritional deficiency which developed in spite of feeding what was theoretically a balanced ration. Another possible factor could have been lack of exercise. It is hoped to carry out further experiments to elucidate more precisely the factor or factors responsible for the poor results when sows are kept indoors.

From this experiment it would appear also to matter little whether the litters are farrowed and reared on an outdoor or an indoor system provided the sow is on an outdoor system during pregnancy.

Summary

Following observations in the field that a high death-rate occurred in litters out of sows which had been kept indoors, an experiment was set up to test the effects of indoor and outdoor systems during pregnancy, farrowing and rearing. Indoor management of sows during pregnancy had a very adverse effect on the size and survival rates of litters.

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A Controlled Test of Tetrachlorethylene as an Anthelmintic Against *Trichostrongylus axei* in Cattle

BY

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ALTHOUGH tetrachlorethylene is often recommended as an anthelmintic for cattle there appear to be only two records of it having been submitted to controlled tests: that of Sprent (1946), and of Roberts (1955). Accordingly, it was thought worthwhile to carry out a laboratory test to assess its efficiency against *Trichostrongylus axei* in cattle. The results are recorded below.

Materials and Methods

The Jersey calves used in this work were reared indoors and were separated from their dams and fed artificially from six days old. The experiment began at a time when the youngest of the six calves was eight weeks old and the oldest 10 weeks; their weights varied between 90 and 110 lb. The calves were infected with *T. axei* by dosing them with 98,000 infective larvae, given at the rate of 4,500 per day for 12 days, and then 4,000 per day for 11 days. Four weeks after the last of the larvae had been given the calves were treated with anthelmintics. Two of them were each given six gelatine capsules, each containing 2.5 ml. of tetrachlorethylene; two others were each given 12 similar capsules, and a fifth received six tablets each containing 5 grammes of phenothiazine. The sixth calf was left untreated as a control. One week after treatment all the animals were slaughtered for *post-mortem* examination and the number of worms present in the abomasum and small intestine of each was estimated by means of the usual dilution technique. Faecal egg counts were not carried out on these animals except before the experiment began in order to check that they were then worm-free.

Results

Administration of the anthelmintics had been carried out in the early afternoon, and some two hours later it was observed that those which had received tetrachlorethylene were unable to stand and were making continual chewing movements. The other two remained quite unaffected. By the next day three of the affected calves were able to stand and were eating normally. The fourth, one of those receiving 30 ml. of tetrachlorethylene, was still unable to stand when seen some 15 hours after receiving the drug, but recovered overnight. When seen again some 30 hours after treatment, it appeared quite normal. The results of the worm counts carried out after *post-mortem* examination are shown in the table below.

Discussion

In a previous paper, Gibson (1955), the variable effects of tetrachlorethylene as an anthelmintic for sheep were discussed, and it was recorded that the general concensus of opinion was that the drug must pass directly into the abomasum to be effective, and that several authors recommended the use of a copper sulphate drench preceding the tetrachlorethylene to stimulate reflex closure of the oesophageal groove. In the present experiment no attempt was made to stimulate closure of the oesophageal groove and the efficiency of the drug varied from 0 per cent. up to 77 per cent. Sprent (1946), reporting a critical test on a single yearling which received 20 ml. tetrachlorethylene preceded by 500 ml. of 5 per cent. sodium bicarbonate, recorded only low efficiency against *Haemonchus contortus*, *Bunostomum phlebotomum*, and *Oesophagostomum radiatum*. Roberts (1955) carried out a field trial of tetrachlorethylene using a 10 per cent. solution of sodium bicarbonate to stimulate closure of the oesophageal groove, and in 86 per cent. of treated animals the efficiency of the drug against *Haemonchus placei* was high as assessed by a comparison of pre- and post-treatment faecal egg counts. In 14 per cent. of his treated animals Roberts recorded no effect on egg count and concluded that in these animals the sodium bicarbonate solution failed to stimulate closure of the oesophageal groove. From the present trial, and from the other work reported in the literature, it is safe to conclude that

Number of calf	Treatment given	Worms found in abomasum at *post mortem*	Worms found in small intestine at *post mortem*	Percentage efficiency of drug
3,190	30 grammes phenothiazine	2,950	Less than 100	95
3,200	15 ml. tetrachlorethylene	17,700	„ 100	68
3,202	15 „ „	52,200	„ 100	0
3,203	30 „ „	17,500	„ 100	68
3,225	30 „ „	12,300	„ 100	77
3,227	Untreated control	54,500	„ 100	—

The column headed percentage efficiency shows the percentage of the worm burden of each calf which was eliminated by the drug assuming that each calf had the same worm burden as the control at the time of dosing.

the action of tetrachlorethylene is not consistent in cattle, and at best its efficiency seems to be much less than that of phenothiazine.

Very little information is available on the toxicity of tetrachlorethylene in cattle. One of the earliest references to its use in this species is that of Schlingman (1925) who demonstrated the safety of doses between 15 ml. and 35 ml. for animals between 12 and 18 months old. Schlingman & Gruhzit (1927) showed that doses of tetrachlorethylene ranging from 15 to 35 ml. could be given to calves without clinical signs of ill effect; but that the smaller doses caused a mild degree of cloudy swelling and slight reticulation of the liver cells, while the larger doses caused additional ill effects ranging from oedema to congestion. The changes were, however, mild, and the liver appeared to tolerate these doses very well. Schlingman (1929) in further experiments confirmed the non-toxicity of tetrachlorethylene for calves. However, Roberts (1955), who treated some 60 calves with tetrachlorethylene at dosage rates of 10, 12.5, and 15 ml. per 100 lb. bodyweight, reported that " coughing, choking, giddiness and anaesthesia were frequently seen." He also stated that one animal which received 15 ml. per 100 lb. bodyweight died within a few minutes of receiving the drug, and that before death it exhibited severe bloat. In the trial reported in the present paper all the animals were adversely affected by the drug, although they all subsequently recovered from its effects. Since at its best the drug has only an efficiency of 70 per cent., is variable in its action even when sodium bicarbonate is used to stimulate closure of the oesophageal groove, and causes untoward symptoms from time to time, there appears to be no reason for using it in preference to phenothiazine. This latter drug has a higher efficiency and only infrequently causes toxic symptoms in very debilitated animals.

Summary

Six calves, after artificial infestation with *T. axei*, were used in a controlled anthelmintic test of tetrachlorethylene. Two of these received 15 ml. of tetrachlorethylene in gelatine capsules, two others received 30 ml. of the same drug, a fifth was given 30 grammes of phenothiazine, and the last was left untreated as a control. One week after treatment the calves were killed for *post-mortem* examination and the number of worms present in the abomasum of each was estimated by the usual dilution technique. The results showed tetrachlorethylene to be variable in its action and at best only 77 per cent. efficient. Alarming toxic symptoms followed the administration of tetrachlorethylene, so that it cannot be regarded as a satisfactory anthelmintic for cattle.

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Electric Stunning of Sheep

BY

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Occasion and Nature of Report

AT the request of the Central Council of Societies in Scotland for the Prevention of Cruelty to Animals we observed the slaughter of 31 sheep in the abattoir of the Glasgow Corporation on February 17th and 18th, 1955, with the object of studying the effectiveness of an appliance* for preliminary stunning.

Out of the 31 sheep, 27 undoubtedly were stunned effectively, one probably was so stunned, as to one there was doubt, one was not effectively stunned before slaughter, and in one case current had to be applied three times before stunning was effected. Our conclusion is that there is no difficulty in stunning the average sheep effectively with the apparatus employed, but that in a small proportion of cases the process is not so satisfactory. The slaughtermen say that old ewes and rams are sometimes difficult to stun.

The Current-Supply Circuit

Current for stunning is taken from a transformer which is mounted on the wall of the abattoir and is supplied from the public mains.

The open-circuit voltage across the electrodes was nominally 90 volts but varied in practice between 78 and 82.5 volts as measured by us. Fluctuations in the supply voltage are usual in heavily loaded mains, and must always be allowed for in the design and use of electrical apparatus.

The Apparatus

This consists essentially of two electrodes—numbered 2 and 3 in Fig. 1—joined by a rigid handle which incorporates an on-off switch (4). The applicator, comparable in shape and size with a telephone

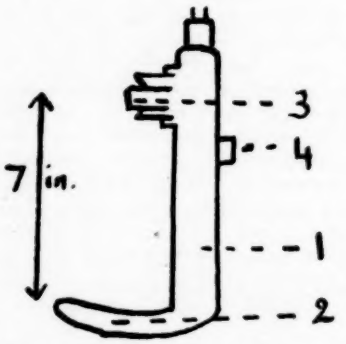

FIG. 1.—Quickstun applicator. 1, handgrip; 2, nose electrode; 3, face electrode; 4, switch.

* The Quickstun Applicator.

receiver, is designed for use with one hand, so that the other hand is free for controlling the sheep.

The electrode 2 is a slightly curved perforated metal plate which is pressed against the nose of the sheep. The electrode 3 consists of a metal tube with serrated end. This tube contains a sponge which projects slightly from the metal holder. The distance between electrode 2 and the centre of electrode 3 is 7 inches, and electrode 3 is about 1 inch in diameter.

The whole apparatus is dipped in a bucket of water at intervals. There is no possibility of altering the distance between electrodes 2 and 3, and the position of electrode 3 can only be varied along the circumference of a circle whose centre is the nose of the sheep, and whose radius is 7 inches. In practice, electrode 3 is applied near the eye of the sheep, but the size of the sheep's head determines whether 3 is above the eye (Fig. 3) or below (Fig. 2).

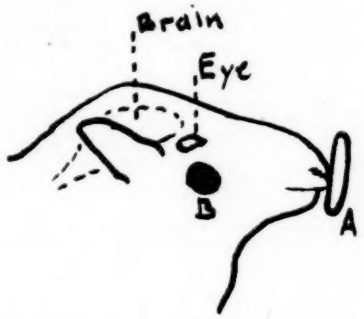

FIG. 2.—Incorrect placing of face electrode. *a*, position of nose electrode 2; *b*, wrong position of face electrode 3.

Duration of Shock

For the first 4 sheep on the first day (see Table I) the slaughtermen were left free to take their own time. They then applied the current for from 10 to 14 seconds. For the remaining 7 sheep on that day the duration of the current was prescribed by ourselves, and was 5 seconds for each of 2 sheep and 3 seconds for the remaining 5.

On the second day the slaughtermen were left free to choose the duration of the shock. They now applied the current usually for 3 or 4 seconds, but in one case for 2 seconds and in one case for 5 seconds.

The difference between their choices of timing on the first and second days may have been due to the fact that they were performing under observation and accordingly wished to make quite sure until they had gained confidence.

Strength of Current

The current fluctuated during each application, presumably as a result of variation in the firmness with which the electrodes were pressed against the head. The upper and lower limits of the readings taken with an Avometer are given in the Table. At some instant during each application the current rose to at least 200 milliamperes. The maximum to which the current ever rose was the 340 mA. noted

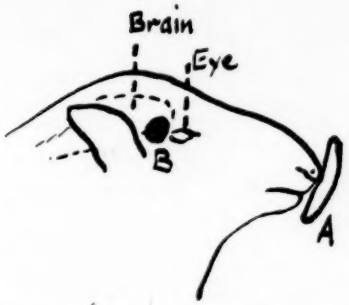

FIG. 3.—Correct placing of face electrode. *a*, position of nose electrode 2; *b*, best attainable position of face electrode 3.

in the case of sheep No. 29. The minimum to which the current ever fell was the 100 mA. noted in the case of sheep No. 1, but the current applied to that sheep rose later to 250 mA.

Criterion of Effective Stunning

Unconsciousness was assumed to have been produced if the animal showed the signs of an electroplectic fit. Absence of these signs was assumed to indicate what is called "missed shock." The course of an electroplectic fit is as follows:—

(i) Tonic phase: immediate flexion of all four limbs and closing of eyes, followed in a few seconds by extension of hind legs. This stage takes about 10 seconds.

(ii) Clonic phase: gradual relaxation of muscles, followed by vague walking movements of hind legs. Eyelids usually open during this stage and the eyes are seen to be rotated upwards so that the pupil cannot be seen. This stage lasts about 30 seconds after the end of the tonic phase.

(iii) Recovery (not normally seen in the slaughterhouse): the animal's eyes appear normal, it looks around, and tries to rise or to lift its head. The animal is no longer unconscious at this time.

Probable Cause of Occasional Failure

We believe this to have been due to the positioning of the electrode 3 on the sheep's face, rather than in variation in individual susceptibility, although it is known that the latter varies from animal to animal and from one human being to another. For instance, a current which, when correctly applied, is quite sufficient to stun the average pig may fail to stun an old boar, though applied in exactly the same way. This fact is allowed for in another apparatus*, which will be referred to in a later paragraph and which provides differently graded doses for different classes of animals. The two or three failures were not attributable to any variation in the strength of the current, which was much the same in those as in the successful cases.

In order to bring on an electroplectic fit, with attendant loss of consciousness, it is necessary to produce a sufficient current-density in the brain. Out

*The Elther Apparatus.

TABLE I

OBSERVATIONS ON STUNNING OF SHEEP, FEBRUARY 17TH AND 18TH, 1955

Sheep No.	Current (mA.)	Duration of shock (sec.)	Fit produced	Remarks
		FIRST DAY		
	Open-circuit voltage before killing : 82·5 V.			
1	100–250	11	Yes	Operator chose
2	150–250	3×10	After 3 shocks	his own time
3	250–180	10	Yes	" "
4	200–250	14	Yes	" "
5	300	5	Yes	Observer
6	300–320	5	Yes	
7	200–230	3	No	prescribed
8	200–230	3	? Yes	
9	250	3	Yes	time
10	250–230	3	Doubtful	" "
11	100–200	3	Yes	" "
	Open-circuit voltage after killing : 81·5 V.			
		SECOND DAY		
	Open-circuit voltage before killing : 78 V.			
12	Not observed	4	Yes	Operator
13	250	5	"	chose time
14	300	4	"	" "
15	150–250	3	"	" "
16	310	4	"	" "
17	330–250	3	"	" "
18	260	3	"	" "
19	300	3	"	" "
20	280–300	4	"	" "
21	240–330	4	"	" "
22	250	3	"	" "
23	240–280	2	"	" "
24	260	3	"	" "
25	230	3	"	" "
26	190–270	4	"	" "
27	280	3	"	" "
28	290	4	"	" "
29	340	4	"	" "
30	250	3	"	" "
31	260–310	3	"	" "
	Open-circuit voltage after killing : 82·5 V.			

of the total current flowing, an appreciable fraction passes by way of the outer muscles of the face and misses the brain altogether. Of that part which does pass through the brain, only a fraction on the outer edge of the current stream passes through the thalamic region so as to be effective for stunning, and the magnitude of this fraction will vary with the position in which the electrode 3 is placed on the face. Since the distance between the electrodes is fixed, the current-density in the brain may be insufficient to cause a fit if the sheep has an exceptionally long face, or if the upper electrode is placed out of line.

If the head is large the electrode 3 may be below the brain as shown in Fig. 2, and the current-density will then be insufficient to cause a fit. The fact that the electrode 3 was in the position shown in Fig. 2 in sheep Nos. 2 and 7 seems to be the most probable explanation of the faulty stunning in these animals. The electrode appeared to be in a similar position in some of the other sheep in the group 1 to 11, but apparently the spread of current was sufficient to cause unconsciousness in these cases, since a satisfactory electroplectic fit occurred. The electrode 3 was in the position shown in Fig. 3 in all the sheep in the group 12 to 31. There appears, however, to be an insufficient margin: the current-density is too near the lowest permissible limit to be reliable.

Safety of the Operator

Everyone who occasionally tinkers with his electric lighting system without first opening the main switch must have touched live conductors by mistake from time to time. Although the pressure may be 240 volts, no harm has resulted beyond a momentary sting which made him withdraw his hand. Danger to life from voltages of this order arises when the conditions are such that the hand closes over the conductor and cannot be released, or when for some other reason contact is not immediately broken.

The voltages in general use in slaughterhouses could be fatal with sustained application and good electrical contact; on the other hand they could safely be increased provided that suitable precautions be taken.

For the safety of the operator a transformer is used as a buffer, and either the secondary circuit may be completely insulated, so as to have a floating potential, or a chosen point in it may be earthed. In any case the conductor which is most likely to be touched by the operator must be earthed, as it is (through the cable) at Glasgow. As an additional precaution the handgrip of the applicator is covered with insulation, though the effect of this safeguard will be diminished or lost if the handgrip is wetted. However, a man wearing rubber boots runs little risk.

An Alternative System *

This is in use in Holland and has been favourably reported upon by Hickman (1954) and by Dr. F. Jean Vinter, Technical Secretary of UFAW, both of whom have seen it in operation at Rotterdam. It is, however, little understood in Britain, probably because the available translations of Dutch texts use unidiomatic terminology (for instance, they refer to what we call a "missed shock" as an "abortive insult"), and because they express the dose in terms of the watt-second, a unit which may be unfamiliar to non-electrical readers. The duration of the shock is restricted by a time switch to ½, 1 or 1½ seconds, and its strength can be varied from 99 to 630 watt-seconds to suit the type of animal (pig, sheep, young bull, old bull, etc.). The dose recommended for sheep is 198 watt-seconds and that for old bulls 420 watt-seconds. The preferred duration is 1 second. The actual (as distinct from the above-mentioned nominal) doses vary with variation in the contact resistance of the animal, but the latter is stated to be fairly constant in practice.

* The Elther.

The advantages of using a time switch for automatically restricting the time are that (1) damage to the carcase is prevented. There might be haemorrhages and fractures if too much electrical energy were applied. (2) The safety of the operator is greatly increased, both by diminishing the chance of his touching a live contact and by limiting the energy in the shock.

The electrodes are metal rings with teeth which are pressed through the hair on to the skin. They are mounted on tongs and applied to opposite sides of the head at carefully chosen points. They could, however, be mounted like earphones on a hoop-shaped spring if single-handed use were insisted upon.

With this apparatus the strength of the shock is much greater than that used at Glasgow. For example, in a typical instance at Glasgow a current of about 0.250 amp. was passed for 3 seconds under a pressure of 80 volts; the dose was, therefore, 60 watt-seconds, whereas the recommended dose for sheep, as given by the Dutch apparatus, is 198 watt-seconds. This increase in the strength of the dose is gained partly by using a higher voltage, about 140 volts in the present instance, and partly by reducing the contact resistance. The latter is about 100 ohms in the present instance, as against 300 or more ohms at Glasgow.

The effectiveness of the shock is still further ensured by passing the current transversely through the brain from side to side of the head, instead of down one side of the head as with the other applicator, with which only the outer edge of the current stream reaches to the essential part of the brain.

Practical Recommendations for Existing Equipment

The equipment studied by us has been in use for a long time, the slaughtermen are accustomed to it, and it effectively stuns the average sheep. A very strong case would probably be needed, therefore, before consent to any drastic innovation could be obtained from all those who would be entitled to a voice in the decision.

There are, however, two improvements that could be made without any drastic change being entailed, and they might considerably reduce the risk of failing to stun.

(1) The voltage could be raised; the current-density would then be raised in a higher proportion, for the resistance of living tissue decreases with increase in voltage. The safety of the operator would be but little affected by raising the voltage from the present nominal 90 volts to 150 volts, provided that an isolating transformer were retained. The earth connection through the cable is an important precaution against accidents.

(2) By careful instruction and supervision the placing of the sponge electrode 3 on the side of the face could be improved, so as to maximise that fraction of the current which passes through the essential part of the brain. The ideal site for the sponge electrode 3 is between the eye and the base of the ear, about an inch nearer to the midline of the sheep's face. The rigidity of the applicator limits the choice of site, but it is important to avoid applying the sponge electrode below the line joining the eye and base of the ear. If the sheep are horned, the electrode should be applied close to the base of the horn.

From the paragraph above it will be seen that the Dutch apparatus appears to have considerable advantages over the other. With the prescribed dosage it can infallibly stun the most difficult animal, and by automatically limiting the duration of the shock it increases the safety of the slaughterman and obviates all risk of damaging the carcase. We, therefore, recommend that this apparatus should be obtained from Hilversum and tried out in Britain.

General Criticism of Electric Stunning

Electric stunning has the following disadvantages as compared with shooting.

(1) Subsequent inspection of the carcase does not disclose whether or not the animal was stunned before slaughter.

(2) There is a tendency in many slaughterhouses to reduce the nominal voltage to a minimum, say 70 volts (though 80 volts is the pressure used at Glasgow). A drop in the mains voltage, due to heavy loading of a feeder, may then easily give rise to missed shock.

(3) Missed shock ensues if the electrodes are wrongly placed. Instances still come to our notice in which pigs are gripped behind the ears with the stunning tongs, in which case they are paralysed but not rendered unconscious. The temptation to make this mistake is considerable because the easiest way to seize a pig with the tongs the wrong way, and the animal, being paralysed, looks as if it were unconscious.

Acknowledgments.—We have to thank the Central Council of Societies in Scotland for the Prevention of Cruelty to Animals for inviting us to make this investigation and paying all our expenses; Mr. Geo. S. Drysdale for making the necessary arrangements; Mr. Alex. McNab, general manager of markets, Mr. Sydney G. Abbott, M.B.E., M.R.C.V.S., D.V.S.M., Corporation veterinary surgeon, and Mr. Crawford, independent slaughterman, with his staff, for affording facilities and helpful co-operation; Mr. S. Simpson, foreman electrician, for assistance; and the Royal Society for loan of an Avometer.

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Current Literature

ABSTRACTS

Operation for Otitis Externa in Dogs According to Zepp's Method. TUFVESSON, GUNNAR. (1955). *Amer. J. Vet. Res.* **16.** 565–70.

The author reviews the recorded methods of operation for otitis externa in the dog, and then gives a statistical report based on 353 dogs which were operated upon at the surgical clinic of the Stockholm Veterinary College. In every case the method of operation employed was that introduced by Zepp ; and in 80·7 per cent. of the cases it was necessary to operate on both ears. The mortality rate was 1·7 per cent. but in those cases (four) where a *post-mortem* examination was possible, it is claimed that death was due to unrelated causes.

The subsequent progress of 281 animals was noted, either by re-examining the dog, or by obtaining the owner's opinion with regard to the success of the operation. This indicated that 49·5 per cent. of the dogs recovered completely, 15·6 per cent. showed considerable improvement and 34·9 per cent. showed little or no improvement—which is considered a satisfactory result considering the chronic nature of the condition.

The author then compares those cases from the series which originated in the town of Stockholm with known statistics for the breed, age and sex of all licensed dogs in that city. He concludes that Spaniels, Poodles and Airedale Terriers are more susceptible to the condition, but that Dachshunds and mongrels are more resistant ; that there is no sex incidence ; and that there is no evidence that the breed or age of the animal had any effect on the outcome of the operation.

It is stated that those dogs which fail to respond to Zepp's operation usually show ulceration and constriction of the horizontal part of the external auditory duct, and in these cases promising results have been obtained following the total extirpation of the meatus acusticus externus cartilaginous. S. W. D.

X-Radiation of Perianal Adenomas in Dogs. MCCLELLAND, R. B. (1955). *J.A.V.M.A.* **127.** 249–50.

Perianal tumours are common in the aged male dog. Clinically they are unsightly, but seldom metastasize and do not appear to cause the affected animal any great discomfort.

The author records the treatment of this condition in 48 dogs (45 males, two females and one spayed female) with X-ray therapy (in six cases this was used in conjunction with surgery). It is stated that in 35 cases the tumour receded completely, although in eight instances additional treatment had to be given on account of recurrences. Six dogs died or were destroyed before completion of treatment, and the other seven cases appear to have been unsuccessful.

As a result of his experience the author considers the optimum dose to be 3,000 r., administered in individual doses of 300 r. given as frequently as the patient's state of health permits. (In this series the average interval between treatments was 6·6 days.) It is stressed, however, that the exact dose administered should vary with the individual animal and also with the nature and response of the tumour.

Abstractor's Note.—There are few facilities available for the X-radiation of dogs in this country, and, in addition, this appears to be a very prolonged method of treatment. In the abstractor's experience the use of surgery alone, or, in suitable cases, the administration of stilboestrol, will give just as satisfactory results. S. W. D.

The Use of a Truss in Paraplegia of the Dog. SWARTZ, R., & JEFFERIES, J. (1955). *Vet. Med.* **50** (7), 319–21.

Made of canvas, the truss is constructed to fit the dog like a waistcoat which laces down the front, and with an extension for the hindquarters. Adjustable leg bands made of elastic pass under the hind legs. Spinal support is provided by aluminium stays the length of the body, which are inserted into pockets about 4 in. from the midline on each side. The truss can be adjusted for different sized dogs but it is preferable to have several sizes available. Wearing such a truss the paraplegic is able to walk without dragging the hindquarters and so excoriation is avoided. In either sex urination and defaecation may be accomplished without contamination of the animal's body.

It is considered that the truss may benefit dogs paralysed as a result of intervertebral disc protrusion, vertebral fractures, selected cases of vertebral dislocations, and disorder of the sacro-iliae junction. The progress of the case will control the times for wearing the truss. Improvement is unlikely if it does not occur in the first 7 to 10 days. L. C. V.

Slaughterhouse Policy in England and Wales

the war and in the post-war control period centralisation of slaughtering led to a great improvement in the standard of meat inspection. Since the decontrol of meat, dispersal of slaughtering has resulted in a serious deterioration of the standards achieved during control although these were far from ideal. This drift from centralised slaughter may very well be further accentuated by the proposed new policy. The demand for new slaughterhouses is most likely to arise in rural areas where local authorities are least able to cope with the onerous tasks of meat inspection.

The Report of the Interdepartmental Committee on Meat Inspection was published in 1951. It made certain recommendations which were applicable to the system of centralised slaughtering which obtained at that time, but few of the recommendations have been adopted. The White Paper spotlights the urgent need for a new approach to the problem of meat inspection which should be complementary to the new policy on slaughterhouses. In reply to a supplementary question in the House recently the Minister of Agriculture agreed that there is " quite a bit of progress still to be made in this country " in the sphere of meat inspection. Administrative action is urgently needed to put meat inspection on a satisfactory basis.

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News and Comment

THE COLONIAL ADVISORY COUNCIL OF AGRICULTURE

The Secretary of State for the Colonies has decided to amend the terms of reference of the Colonial Advisory Council of Agriculture, Animal Health and Forestry, which was first set up in 1929. Its membership has been altered to bring it in line with its new functions.

Among its new terms of reference are:—

To keep under review the general conditions of agriculture, animal health and forestry in the Colonial Empire and to maintain contact with the work of the Colonial Governments in these spheres of development; to advise the Secretary of State or individual Colonial Governments, at their request, upon general policy and development or particular aspects of policy and development; to bring to the attention of the Committee in broad outline problems on which research or investigation is required.

The membership of the Council is as follows:—

The Lord Lloyd, M.B.E., Parliamentary Under-Secretary of State for the Colonies (Chairman); Mr. W. B. L. Monson, C.M.G., Assistant Under-Secretary of State, Colonial Office (Vice-Chairman); Professor W. I. B. Beveridge, Professor of Animal Pathology, University of Cambridge; Mr. W. H. Cashmore, C.B.E., Director, National Institute of Agricultural Engineering; Mr. C. Clark, Director of Institute for Research in Agricultural Economics, University of Oxford; Sir Geoffrey Clay, K.C.M.G., O.B.E., M.C., Agricultural Adviser to the Secretary of State for the Colonies; Mr. F. S. Collier, C.M.G., C.B.E., Forestry Adviser to the Secretary of State for the Colonies; Professor M. McG. Cooper, Professor of Agriculture and Rural Economy, King's College, University of Durham; Dr. W. Davies, Director, The Grassland Research Institute; Professor A. N. Duckham, C.B.E., Professor of Agriculture, University of Reading; Sir Frank Engledow, C.M.G., F.R.S., Professor of Agriculture, University of Cambridge; Mr. G. Lacey, C.I.E., Adviser on Drainage and Irrigation to the Secretary of State for the Colonies; Mr. D. Martin, of Unilever Limited; Mr. R. S. Marshall, C.B.E., Adviser on Animal Health to the Secretary of State for the Colonies; Mr. D. Rhind, O.B.E., Secretary for Colonial Agricultural Research; Sir William Slater, K.B.E., F.R.I.C., Secretary, Agricultural Research Council.

MOUNTAINSIDE CHECK FOR FOOT-AND-MOUTH

As part of the precautionary measures against the spread of foot-and-mouth disease, an outbreak of which was recently confirmed at Craig-yr-Hufen farm, Senghenydd, South Wales, a posse of veterinary surgeons, police and farmers rounded up some 200 sheep grazing over the 1,000 foot Mynydd Eglwysilian mountainside. The inspection was carried out under the direction of Mr. A. G. Beynon, the Ministry's superintending veterinary officer for South Wales.

The whole mountain was thoroughly searched, and all the sheep were found to be in good health. A second examination, allowing time for the incubation period, will have been carried out by the time these words are read.

It is feared that the outbreak may seriously affect the success of the Bath and West Show, which is to be held in Cardiff.

IN PARLIAMENT

Slaughterhouses (Meat Inspection)

MR. H. HYND (May 17th) asked the Minister of Agriculture, Fisheries and Food whether, in view of the recommendation in paragraph 109 of the Oake Committee's Report, that, whenever practicable, veterinary surgeons should be appointed as senior inspectors responsible for groups of non-veterinary meat inspectors, he will take steps to acquire the necessary powers to insist on such supervision by veterinary officers of meat inspection in the case of slaughterhouses towards the cost of which the Government agree to make a financial contribution.

MR. AMORY: No, Sir. Local authorities are responsible for meat inspection, and the kind of supervision and the officers required are matters best left to their discretion.

MR. HYND: Is the right hon. Gentleman aware that all local authorities are not equally progressive in these matters and require some lead from the Government? What is the good of the House passing legislation about clean food, and so on, if we do not go to the root of the problem?

MR. AMORY: I do not want the hon. Member to have any doubt in his mind. I assure him that I am very anxious to do everything I can to make sure that the inspection shall be as satisfactory as it can be; but the way in which that is carried out, and the type of officer by whom it is carried out, are matters in which we ought to give a great deal of discretion to the local authorities.

SIR F. MEDLICOTT: Is my right hon. Friend aware that many local authorities would very warmly welcome any assistance that can be given to them by veterinary surgeons?

MR. AMORY: I agree with my hon. Friend on that, and he will agree with me that there is at present a shortage of veterinary officers.

MR. CHAMPION: Does the right hon. Gentleman recognise that in this matter we lag behind most of the continental countries, certainly those most advanced in this matter of meat inspection? Would it not be a good thing if we employed veterinary officers for this purpose of inspection?

MR. AMORY: I agree. I think there is quite a bit of progress still to be made in this country.

Rabbits

MR. HURD (May 17th) asked the Minister of Agriculture, Fisheries and Food in which districts which were clear of rabbits last year they are now becoming

re-established in considerable numbers; and to what extent farmers are co-operating to exterminate them in the rabbit clearance areas which he has designated.

MR. AMORY: Although a sprinkling of rabbits is now to be found in most areas, nowhere are they yet becoming re-established in any considerable number. In statutory rabbit clearance areas, farmers generally, I am glad to say, are showing their willingness to co-operate in dealing with this pest.

MR. HURD: Will my right hon. Friend assure the House that his information is up to date? In the last three or four days I have heard of 12 rabbits being shot in Northamptonshire and some more being run over by a motor car in Suffolk; it seems that they are coming back rather fast.

MR. AMORY: I think the numbers referred to would come within the definition of "sprinkling." At the same time, I am very anxious that I should know of any adverse developments in this matter, because, of course, the next few months will be of very great importance.

DR. KING: Is the right hon. Gentleman aware that if there is anything more cruel than the wilful introduction of myxomatosis, it is the wilful re-introduction of rabbits so that they may be destroyed ultimately by myxomatosis? Is the right hon. Gentleman satisfied that that wilful re-introduction is not taking place?

MR. AMORY: I should be sorry to know that it was taking place on a considerable scale. I agree that we must do everything we possibly can now to ensure that the rabbit population does not build up.

SOMETHING FOR NOTHING

Members of the profession will welcome—and heartily endorse—observations reported in the press recently from a speech made by the secretary of the Birmingham branch of the R.S.P.C.A.. He said:—"Our clinics are intended for poor people only, and it is quite wrong that people should come to us merely to get treatment on the cheap . . . each owner is interviewed by our clinic almoner."

It could be hoped that certain other welfare societies would take these words to heart and would institute a proper and effective system of almoning. The profession is in favour of clinics for animals of the *genuinely poor* and has proferred its services over a long period of years. It is the ceaseless advertisement (forbidden to the professional man), and the resultant attraction to the clinics of those who are perfectly well able to afford a fee that is so objectionable.

HOLIDAY EXCHANGE

The following children of continental veterinary surgeons are still hoping for exchange holidays, etc., with the children of British veterinary surgeons. We have been able to make arrangements for quite a number to date, but interested readers are still invited to write to the General Secretary for fuller particulars.

Austria

Exchange

14-year-old boy—Pressbaum (Austria).

France

Exchanges

14-year-old boy—Montaigu (Vendée). Summer, 1956.

14-year-old boy—Champdeniers (Deux-Sèvres). Summer, 1956.

15-year-old boy—Avranches (Manche). Summer, 1956.

14-year-old boy—Neuvy-le-Roi (Indre-et-Loire). Summer, 1956.

14-year-old boy—Toucy (Yonne). Would like to come to Britain this summer and have English boy there next Easter (1957).

13-year-old girl—Locmine (Morbihan) Summer, 1956.

18-year-old girl—Reims (Marne). Would like to come to Britain this summer and have English girl at Easter.

17-year-old girl—St. Bazeille (Lot-et Garonne. Would like to come to Britain this summer and have English girl at Easter.

16-year-old girl—Valence (Drôme).

Au pair

17-year-old boy, would like to stay in Britain for 10 months but invite an English boy in exchange if desired. He could help British veterinary surgeon in practice, drives car, etc.

Paying Guest

16-year-old girl, mid-July to August 30th—South of England if possible

Germany

Exchanges

16-year-old boy—Grebendorf-Eschwege (Hessen).

18- and 16-year-old boys (brothers)—Fleckeby (Schleswig-Holstein).

Italy

Exchange

14-year-old boy—Florence, Italy.

R.C.V.S. EXAMINATIONS

ANIMAL MANAGEMENT (May, 1956)

Dublin

Berry, J. P.; Cousins, F. G. O. (credit); Crawford, H. M.; Delahunty, Daniel; Dowling, W. A.; Duffy, E. F.; Duignan, J. J. A. (credit); Feeney, J. K.; Flannery, Donald; Gaffney, W. M. N.; Gormley, B. A.; Hannigan, J. H.; Harrington, D. P.; Kenny, M. P.; Lawlor, Florence; McKervey, J. H.; McKinley, P. J.; Maloney, R.; Murray-Hayden, P. J.; O'Leary, Michael; O'Reilly, D. J.; Prendergast, M. J. G.; Smith, F. M., and Sweetman, W. L.

PHARMACOLOGY (May, 1956)

Dublin

Cousins, F. G. O.; Duffy, E. F.; Gaffney, W. M. N.; Gormley, B. A.; Harrington, D. P.; Kenny, M. P. (credit); Lawlor, Florence; Leslie, N. W.; Lynch, M. E.; Lyons, V.; McKervey, J. H.; McKinley, P. J.; Murray-Hayden, P. J.; O'Leary, Michael; Prendergast, M. J. G.; Reidy, D. F.; Sheahan, T. J.; Smith, F. M.; Smyth, J. J., and White, J. E. C.

SHADES OF MACBETH

Mr. W. A. Robins, a retired senior inspector of schools, has been widely reported in the press as saying that people in Devon still consult witches. Even farmers are said not to have disdained calling upon a spell or two to enhance the health or productivity of their herds.

Witches are, notoriously, on easy terms with cats, bats and werewolves, and it may be they have repented their deplorable past and decided to make cattle more fecund instead of barren, and to increase the nutritive value of milk rather than turn it sour.

Animals have, since the dawn of time, been associated with the magic arts, and in parts of Europe, even to-day, children are said to be passed three times under a horse's belly to cure them of whooping cough.

LEGAL NOTE

A case of interest to veterinary surgeons in small-animal practice was heard recently at Woolwich county court. The owner of a pedigree cat took it for treatment by a veterinary surgeon. He removed the cat by car from one of his surgeries to another, and after treatment returned the cat to his car in order to restore it to its owner. Although it was in a basket, the cat escaped and was lost.

The veterinary surgeon pleaded that the owner's basket was so insecure that he had to tie it up with string; and though he did so as securely as possible the basket itself was so faulty that the cat must have escaped despite his having taken every reasonable precaution.

The Bench, however, found against him, though the damages claimed were reduced because of the condition the basket had been in when it was handed over to him.

A.S.V.O. ANNUAL DINNER

The annual dinner of the Association of State Veterinary Officers was held at the Café Royal on the evening of May 5th, when over 100 members and guests were present. It was a very enjoyable evening and the speeches were of a high standard.

The toast of the B.V.A. was proposed by Mr. W. J. McIlroy, President of the A.S.V.O., and Mr. E. Wilkinson, President of the B.V.A., replied.

The toast of the guests was proposed by Mr. A. M. Taylor, and the replies were given by Mr. J. N. Ritchie, Chief Veterinary Officer, and Mr. Stanley Mayne, the Secretary of the I.P.C.S.

THE LIVESTOCK EXPORT GROUP

We think our readers will be interested in the following extracts from the Report of the Committee for the year ended March 31st, 1956:—

Veterinary Tests—Tasmania

A recent change in the veterinary regulations of Tasmania now requires all cattle to give a negative reaction to the blood agglutination test for brucellosis —the change has been introduced because the State is endeavouring to eradicate brucellosis there. Formerly, and in the case of female cattle, animals which had been inoculated with S.19 vaccine between the ages of four and eight months of age were accepted.

Cattle Semen Exports

During the year and subsequent to the meeting with the Minister of Agriculture in November, 1954, the Committee maintained a close watch on exports of cattle semen. In July last year, a joint meeting with the National Cattle Breeders' Association took place to see what further action might be taken regarding the general procedure laid down by the Ministry. It was resolved that the Minister be asked to consider the formation of a separate committee which would examine all applications for semen exports and that the composition of it be evenly balanced in regard to the interested parties. This resulted in the Minister announcing later in the year that he had set up a Special Committee which would meet and report their conclusions direct to him whenever objections were raised against any application for the export of cattle semen.

Sale Conditions—Stock for Export

In view of circumstances which arise when animals bought at auction for export fail to pass the required veterinary tests, the N.C.B.A. submitted a request to the Group asking them to consider whether specific rules between buyer and seller and covering all eventualities could be effectively introduced.

A draft set of rules was compiled and discussed at length by the Committee, but because of the varying veterinary requirements of overseas countries, it was found impracticable to implement them, the general consensus of opinion being that the private arrangement of conditions between vendor and purchaser could not be bettered.

Pedigree Stock Exports

The total number of stock exported by the Group's member Societies over the 12 months ended December 31st, 1955. was satisfactory.

Thoroughbred exports fell from 1,424, in 1954 to 1,307 but other horses and ponies jumped from 19 to 146.

Cattle, sheep and pig exports in 1955 totalled 2,089 compared with 3,956 in 1954. The decrease of almost 2,000 head on the 1954 figure arises by virtue of the fact that, in 1954, Yugoslavia imported 2,212 pigs in the form of capital outlay which cannot be regarded as being within the normal run of exports.

Among exports of stock, prominence must be given to sheep and it is quite remarkable that this trade still remains at its present level in view of import embargoes placed on sheep by several countries some of which, under normal conditions, are valuable markets.

With the exception of the Dairy Shorthorn, all other dairy breeds increased their exports. English Jersey exports were 107, Ayrshire 104, English Guernsey 32, and Dairy Shorthorn 45.

Beef Shorthorns exported most of any breed with a total of 395, an increase of 13½ per cent.

The total value of livestock exported in 1955 increased by £24,824, cattle increasing by £16,576 and sheep, etc., by £8,248. Small though it be, the value of the trade in pedigree stock has been rising steadily over the years.

COMING EVENTS

May

30th (Wed.). Annual General Meeting of the Veterinary Benevolent and Mutual Defence Society at The Midland Hotel, Manchester, 2.30 p.m.

Section of Comparative Medicine, Royal Society of Medicine Summer Meeting at Wye College, 11.15 a.m.

June

1st (Fri.). Meeting of the Western Counties Division, B.V.A., at The Rougemont Hotel, Exeter, 2.30 p.m.

6th (Wed.). 113th Annual General Meeting of the Royal College of Veterinary Surgeons at 10, Red Lion Square, London, W.C.1, 12 noon.
Annual General Meeting of the Victoria Veterinary Benevolent Fund at 10, Red Lion Square, immediately following the Annual General Meeting listed above.

7th (Thurs.). Annual Meeting of the R.A.V.C. Golfing Society at the North Hants Golf Club, Fleet, 10 a.m.

8th (Fri.). Annual Dinner of the Royal Army Veterinary Corps Officers Club at Grosvenor House, Park Lane, London, W.1.

Annual General Meeting of the Welsh Division, B.V.A., at the Belle Vue Hotel, Aberystwyth, 2.30 p.m.

9th (Sat.). 14th Annual General Meeting of the Society of Women Veterinary Surgeons at the Royal Veterinary College, Camden Town, N.W.1, 2.15 p.m.

13th (Wed.). Summer Meeting of the Central Division, B.V.A., at the Cooper Technical Bureau, Berkhamsted, Herts, 11 a.m.

14th (Thurs.). Meeting of the Technical Development Committee, B.V.A., at 7, Mansfield Street, London, W.1, 11.30 a.m.

Annual General Meeting of the North of Scotland Division, B.V.A., in the Northern Hotel, Aberdeen, 2.30 p.m.

20th (Wed.). Meeting of the Midland Counties Division, B.V.A., at the Raven Hotel, Droitwich.

Summer Meeting of the Lancashire Division, B.V.A., at the Chester Zoo, followed by cocktails and an informal dinner at Pandora, Tarvin,

22nd (Fri.). Annual General Meeting of the Lincolnshire and District Division, B.V.A., at the George Hotel, Grantham, 2.15 p.m.

September

16th to 22nd (Sun. to Sat.). 74th B.V.A. Annual Congress at Royal Leamington Spa.

R.C.V.S. EXAMINATIONS

June 7th, Thursday. D.V.S.M. Written Examinations commence at Edinburgh.

June 11th, Monday. D.V.S.M. Oral and Practicals commence.

June 21st, Thursday, and June 22nd, Friday. M.R.C.V.S. Written Examinations.

June 25th, Monday. M.R.C.V.S. Practical and Orals commence (Panels " A " and " B ").

BRITISH VETERINARY ASSOCIATION QUARTERLY MEETINGS

Wednesday, July 11th, 1956—No. 7, Mansfield Street

10.30 a.m.—Organising Committee.

2.00 p.m.—Home Appointments Committee.

3.30 p.m.—Parliamentary and Public Relations Committee.

Thursday, July 12th, 1956—No. 7, Mansfield Street

10.00 a.m.—Veterinary State Medicine Committee.

12.30 p.m.—Finance Sub-committee.

2.15 p.m.—General Purposes and Finance Committee.

Friday, July 13th, 1956—Connaught Rooms

10.30 a.m.—Council Meeting.

ADDRESSES OF DISEASE INFECTED PREMISES

The list given below indicates, first the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Anthrax

Ayr. Hillhead Farm, Galston (May 11).

Dumfries. Birkshawhead Farm, Kirkpatrick-Fleming, Lockerbie (May 15).

Lancs. Tunstall House Farm, Tatham Fells, Bentham (May 14).

Leics. Ashlands Farm, Narborough (May 12); The Nurseries, Ashby Road, Hinckley (May 15).

Lincs. Blackhole Drove, West Pinchbeck, Spalding (May 15).

Northants. Highfield Farm, Crick (May 12).

Northumberland. Low Stublic Farm, Langley-on-Tyne, Hexham (May 12).

Staffs. Old Star Farm, Oakamoor, Stoke-on-Trent (May 11).

Yorks. Mill Farm House, Bridlington Street, Hunmanby, Filey (May 14); Manor Farm, Foggathorpe, Selby; Skiers Hall Farm, Elsecar, Barnsley (May 15); West Flotmanby, Filey (May 16).

Fowl Pest

Essex. Fleming Farm, Nobles Green, Rochford (May 11); The Gloucesters, Hunters Chase, Hutton, Brentwood; Lilyfield, Hunters Chase, Hutton, Brentwood (May 15); Marsworth, Hunters Chase, Hutton, Brentwood (May 16).

Herts. Meadow Sweet Rose Farm, Water Lane, Bovingdon, Hemel Hempstead (May 11); Wander Poultry Farm, Kings Langley (May 15).

Lancs. Scotts Farm, Blackbull Lane, Cadley, Preston (May 11); Greens Farm, Rake Lane, Clifton (May 14).

Lincs. 2/30, Mainwaring Allotments, Lincoln (May 11).

Foot-and-Mouth Disease

Glamorgan. Craig-yr-Hufen, Senghenydd, Caerphilly (May 15).

Swine Fever

Derby. 26, Vicarage Road, Mickleover (May 15).

Essex. Ivydene, Lodge Lane, Collier Row, Romford (May 16).

Hants. Glenfield Farm, Cadnam, Southampton (May 16).

Kent. The Piggeries, Vicars Marshes, Thames Road, Crayford, Dartford (May 15); Sandling Park Farm, Sandling, Saltwood, Hythe (May 18).

Lancs. Back Lane Farm, Backenden, Accrington (May 19).

Lincs. Farrows Yard, North Kelsey (May 16).

Staffs. Thorneyfields Farm, Stafford (May 15); Lower Pendeford Farm, Pendeford, Wolverhampton (May 16).

Wilts. Highfield Farm, Landford, Salisbury (May 16).

Worcs. Oldfield Farm, Ombersley; The Latchetts, Heightington, Bewdley; Nurseries and Piggeries, Wolverley Road, Franche, Kidderminster (May 15).

Yorks. Hall Farm, Burton Salmon; Handsworth Hall Farm, Sheffield (May 18).

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

Pig Diseases in the Isle of Man

Sir,—In a recent issue, under the heading " Pig Disease in the Isle of Man " is a comment which is somewhat inaccurate and tends by its inferences to minimise and mislead, and consequently I now feel that the profession should be made aware of recent observations relating to a condition of atrophic rhinitis in the Isle of Man.

The official survey was carried out by the Animal Health Department of the Isle of Man Board of Agriculture and Fisheries, and, as the comment in your issue states, a condition indistinguishable from atrophic rhinitis was found in pigs of all breeds with no possible contact with Landrace breeds.

There existed in the Isle of Man an atrophic rhinitis Order similar to the one existing in England, but the percentage of pigs of all breeds affected with a condition of atrophic rhinitis was so high, that the Manx authorities decided that the disease was of no material importance and recently revoked the order.

From my own observation of this condition in the Isle of Man, I feel obliged to point out the inaccuracies of the latter part of the comment.

1. The snouts of affected animals showed lesions of both the turbinate bones and nasal septa. In many cases the distortion of the nasal septum was equal to anything seen in snouts of affected Landrace.

2. At clinical inspection of herds from which *post-mortem* inspection had shown affected pigs, it became quite apparent that many of the pigs showed evidence of a clinical disease manifested by uni- or bi-lateral ocular discharge, sneezing, snuffling and, in older pigs, a shortening and thickening of the snout.

3. Herds inspected during the normal course of practice revealed many pigs suffering from ocular discharge, nasal discharge, sneezing and snuffling. In some cases even distortion of the snout could be detected, but no apparent ill-health.

As we are well aware, confirmation of the condition of atrophic rhinitis can only be sought on *post-mortem*, and one would think that a condition of atrophic rhinitis confirmed by removing snouts of all pigs passing through the only two abbatoirs of an isolated island community, would be more significant than the evidence of a spreading clinical disease which in its manifestations could always be confused with virus pneumonia or influenza.

Observation of the close relationship between the flare-up of an acute virus pneumonia in susceptible pigs, and the finding of evidence of an atrophic rhinitis—both clinical and *post-mortem*—in herds where neither condition had appeared to have existed before, suggests that possibly tackling the virus pneumonia problem with its enormous economic loss to the pig industry would be, though less glamorous and controversial, certainly more profitable.

Yours faithfully,

GEOFFREY B. STUBBS.

Westville,
Woodbourne Road,
Douglas, I.O.M.

May 7th, 1956.

The note to which our correspondent refers was based upon an article in a leading agricultural journal. In addition to referring to a condition " indistinguishable from atrophic rhinitis " the article stated that there had been no visible signs of atrophic rhinitis in the herd.—*Editor.*

Talking Point

Sir,—It is to be regretted that Mr. Hebeler should have made such comments with regard to animal welfare societies. He is obviously thinking only of his own area—a country area. In such an area the veterinary surgeon is well known due to his contact with farmers, and he relies mainly on the large animal for his practice. The domestic pet is subsidiary.

In a large town the veterinary surgeon is well known by a certain nucleus of regular clients, but he also depends on a considerable amount of " passing trade." Thus he finds himself at a disadvantage compared with animal welfare societies who can advertise and make their presence known.

I feel sure Mr. Hebeler would have a quite different view were he one of the unfortunates who have had a free clinic opened in close proximity to his surgery. I, myself, have not been seriously affected by animal

welfare societies, but I know others who have. In this city only recently a clinic has been opened immediately between two veterinary surgeries.

The R.S.P.C.A. was formed to deal with cases of cruelty, other societies are too much like businesses and in my opinion their power to advertise, and the freedom with which they offer a service to all and sundry —not confining it to poor persons—gives them a most unfair advantage over the private practitioner.

It must be accepted that welfare clinics are here to stay; but those members of the profession who work in them can render sterling service by insisting upon proper almoning—at present all too conspicuous by its absence.

Yours faithfully,

E. WESTCOTT.

8 Roscommon Street,
Liverpool 5.

May 15th, 1956.

Sir,—Mr. Hebeler's ears must be burning following his remarks printed in THE VETERINARY RECORD of May 12th, on the subject of animal welfare societies.

If his prophecies are correct we shall have a situation where, on the one hand, a constant stream of new graduates will be seeking employment with welfare societies, while on the other an ever-increasing number of established veterinarians will become progressively more and more pauperised until they have to close down and go cap in hand to the welfare societies for a job.

Yours faithfully,

PETER O. RANDLE.

164 Grove Street,
Liverpool 7.

May 15th, 1956.

The Meat Inspection Service

Sir,—For many years a properly organised meat inspection service under veterinary control in England and Wales has been noticeably conspicuous by its absence. This is in complete contrast with the various excellent schemes for veterinary meat inspection in operation overseas.

I would therefore greatly appreciate it if the officers of the B.V.A. would please explain, through the medium of THE RECORD, how this unfortunate situation came to pass, and also if they would give a full account of what is being, and has been done, to remedy it.

Yours faithfully,

J. N. SIMPSON-WHITE.

6009 Rugby Avenue,
Huntington Park,
California, U.S.A.

April 22nd, 1956.

We suggest to our correspondent that the columns of The Supplement, over the past few years, contain full accounts of the Association's substantial activities in this connection.—Editor.

Cryptorchidectomy in Pigs

Sir,—Without wishing to criticise Mr. R. W. Johnston's interesting article last week on "A Technique for Cryptorchidectomy in Pigs," I should like to bring to his notice the following extract from THE VETERINARY RECORD (**66**, 482) in an article on cryptorchidism.

"If a boar is a unilateral cryptorchid and the scrotal testis is removed, the boars become as barrows with a total loss of sex instinct, and apparently only a very small percentage of cryptorchid pigs from which the normal testis has been removed develop a sexual odour in the carcase, particularly if the pigs are marketed at around six months of age."

Am I right in assuming he only performs this operation on double rigs, for there seems to be little indication for it in unilateral ones, a point which he does not quite make clear.

Yours faithfully,

R. T. KNOWLES.

Royal Veterinary College,
Royal College Street,
Camden Town.

May 15th, 1956.

Dislocation of the Hip in the Dog

Sir,—When the head of the femur is torn out of the acetabulum, with subsequent rupture of the capsular ligament and other adjacent tissues, Providence by means of the fibroblastic network, develops a highly efficient false cartilaginous joint. The effectiveness of this depends upon the degree of injury but usually allows the dog a happy existence with just the occasional bout of rheumatism. There is little doubt, in my view, that this is the end result of most cases of surgical reduction, and it is not for want of trying that I have found this to be so. However, when a client insists upon action, I naturally do all I can.

As regards the R.S.P.C.A., for whom I am a zealous worker, our local inspector, apparently satisfied with my methods, is considering a trip to "Shangri La" to investigate the use of "deep muscle vitriols."

Yours faithfully,

R. D. FRANKLIN.

31 Cleveland Road,
Wolverhampton.

May 14th, 1956.

ADVERTISER'S ANNOUNCEMENT

IMPERIAL CHEMICAL (PHARMACEUTICALS) LIMITED have now introduced "Phenovis" Phenothiazine Tablets (Mineralised). These tablets each contain 5 grammes of "Phenovis" Phenothiazine, together with the appropriate amounts of trace elements, copper and cobalt. They are additional to the "Phenovis" Mineralised Dispersible Powder which is already available for the treatment of roundworms in farm animals.